

## CLAIMS

1. Use of a steel in the manufacture of or coating of equipment or an element of equipment characterized in that, in order to provide the equipment or element of equipment with improved coking resistance properties, said steel is an austenitic steel with a composition comprising:

- at most 0.15% of C;
- 2% to 10% of Mn;
- at most 2% of Ni;
- at most 4% of Cu;
- 0.1% to 0.4% of N;
- 10% to 20% of Cr;
- at most 1% of Si;
- at most 3% of Mo; and
- at most 0.7% of Ti.

15 2. Use according to claim 1, characterized in that said steel comprises:

- at most 0.1% of C;
- 5% to 10% of Mn; and
- 15% to 18% of Cr.

3. Use according to claim 1 or claim 2, characterized in that said steel comprises:

- about 0.05% of C;
- about 7.5% of Mn;
- about 1.5% of Ni;
- about 2.5% of Cu;
- about 0.15% of N;
- about 18% of Cr; and
- about 0.5% of Si.

25 4. Use according to claim 1 or claim 2, characterized in that said steel comprises:

- about 0.04% of C;

5           • about 10% of Mn;  
• about 1.5% of Ni;  
• about 4% of Cu;  
• about 0.1% of N;  
• about 17% of Cr;  
• about 0.5% of Si; and  
• about 0.7% of Ti.

10       5. Use according to claim 1 or claim 2, characterized in that said steel comprises:  
• about 0.05% of C;  
• about 8.5% of Mn;  
• about 1.5% of Ni;  
• about 3% of Cu;  
• about 0.2% of N;  
15       • about 17% of Cr;  
• about 0.5% of Si; and  
• about 2.1% of Mo.

20       6. Use according to any one of claims 1 to 5, characterized in that said steel comprises:  
• at most 0.01% of S;  
• at most 0.05% of P; and  
• at most 0.005% of B.

25       7. Use according to claim 6, characterized in that said steel comprises 0.0005% to 0.005% of B.

8. Use according to any one of claims 1 to 7, characterized in that said steel comprises:  
• at most 0.030% of S; and  
• at most 0.045% of P.

30       9. Use according to any one of claims 1 to 8, characterized in that said steel further comprises:

- at most 1.1% of Nb;
- at most 0.40% of V;
- at most 0.05% of Al; and
- at most 0.002% of Ca.

5 10. Equipment or element of equipment, characterized in that it is manufactured in a steel as defined in any one of claims 1 to 9.

11. Equipment or element of equipment, characterized in that it is coated with a steel as defined in any one of claims 1 to 9.

10 12. A method of manufacturing an element of equipment according to claim 10, characterized in that said element of equipment is produced all of a piece.

15 13. A method of manufacturing an element of equipment according to claim 11, characterized in that it employs at least one technique selected from co-centrifuging, plasma, PVD, CVD, electrolytic deposition, overlay and plating.

14. Use of equipment according to claim 10 or claim 11 in implementing a petrochemical process carried out at temperatures of 350°C to 1100°C.

15. Use according to claim 14, characterized in that said petrochemical process is a catalytic reforming process that produces a reformat at temperatures of 450°C to 650°C.

20 16. Use according to claim 14, characterized in that said petrochemical process is isobutane dehydrogenation to produce isobutene at temperatures of 550°C to 700°C.